

## Section 3.8 – Boundary Problems

### Problem Set 2

**State an inequality for the following situations and solve it.**

1. One number is six more than another and their sum is at most -12.
2. One number is three more than half another. Their sum is at least 10.
3. One number is one fourth of another. Their difference is at most twice the first.
4. A pentagon is a five sided figure. Three of the sides are equal in length, the fourth side is twice their length and the fifth side is five less than the fourth side. The perimeter is at least 500.
5. Of four consecutive integers, the first plus twice the last is less than four times the second.
6. The length of a rectangle is four more than three times its width. The perimeter must be at least 1000.
7. Housing sales have been increasing since 1990 at the following rate:  $S = 2.1x + 2000$ . For what years are the sales less than 2200?
8. The cost of producing skateboards start at \$1500 regardless of the number produced. Each individual skateboard costs \$2.25. What range of boards can be produced if the total cost must be less than \$3000?
9. The sum of two consecutive integers is at most half the first.
10. A farmer needs to build a pig sty adjacent to his barn. The side of the bar against which the sty will be built is 45' long and the sty will take up that entire length. If the area has to be at least 500' what values can its length have?